

What is claimed is:

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2 **1.** (original) A method of obfuscating executable code that uses a first reference including a
3 symbolic object name and a symbolic field name to reference a field containing data,
4 the method comprising the steps of:

5 defining an object wherein the field is not referenced by a symbolic field name; and
6 replacing the first reference with a second reference that references the field by the
7 defined object's name and the field as required by the defined object.

1 **2.** (original) A method of obfuscating executable code in a language that includes classes and
2 methods that permit reflection, the method comprising the steps of:

3 using the classes and methods that permit reflection to produce one or more first
4 constructs that have the same effect as a second construct in the executable code that does not
5 employ reflection; and
6 replacing the second construct with the one or more first constructs.

1 **3.** (original) A method of executing obfuscated code that includes a portion that relates a first
2 construct whose definition is local to the executable code to a second construct whose
3 definition is external to the executable code and that has been obfuscated by encrypting at least
4 the second construct, the method comprising the steps of:

5 receiving code that includes the portion; and
6 when the executable code is executed, employing a key and cryptographic apparatus to
7 relate the second construct to the external definition therefor.

1 **4.** (original) The method of executing obfuscated code set forth in claim 3 wherein the step of
2 employing the cryptographic apparatus includes the steps of:

3 using a decryption key with the cryptographic apparatus to decrypt the encrypted
4 second construct; and
5 using the decrypted second construct to relate the first construct to the external
6 definition.

5. (original) The method of executing obfuscated code set forth in claim 3 wherein the step of employing the cryptographic apparatus includes the steps of:

- using an encryption key with the cryptographic apparatus to encrypt at least the second construct in the external definition; and
- using the encrypted second construct from the external definition to relate the encrypted second construct from the executable code to the external definition,

whereby the first construct is related to the external definition.

6. (currently amended) The method of executing obfuscated code set forth in any one of claims 3, 4, or through 5 wherein:

- the executable code includes a plurality of the first and second constructs contained in a plurality of ~~of~~ the portions; and
- a plurality of keys and the cryptographic apparatus are employed to relate the second constructs to the external definitions therefor.

7. (currently amended) The method of executing obfuscated code set forth in any one of claims 3, 4, or through 5 wherein:

- the second constructs are class specifiers; and
- the step of employing a key and cryptographic apparatus is performed in a loader for the class specifiers.

8. (currently amended) The method of executing obfuscated code set forth in any one of claims 3, 4, or through 5 wherein:

- in the step of receiving, the code is downloaded; and
- the step of employing a key and cryptographic apparatus is performed after downloading.

9. (original) A method of obfuscating executable code that includes a portion that relates a first construct whose definition is local to the executable code to a second construct whose definition is external to the executable code,

the method comprising the steps of:

- locating the portion; and
- encrypting at least the second construct.

10. (original) The method of obfuscating executable code set forth in claim 9 wherein
there are a plurality of first and second constructs contained in a plurality of the
portions; and

in the step of encrypting at least the second construct, a plurality of keys is employed to
encrypt the second constructs in the plurality of portions.

11. (original) A method of executing a construct that is encrypted in executable code without
decrypting the encrypted construct, the construct being one of a plurality of constructs
belonging to an execution environment in which the executable code will execute and
the method comprising the steps of:

using an encryption key that was used to encrypt the construct in the executable code to
encrypt the constructs in the execution environment;

comparing the encrypted construct in the executable code with the encrypted constructs
in the execution environment; and

when a match is found, executing the encrypted construct in the executable code using
the unencrypted construct in the execution environment that corresponds to the matching
encrypted construct in the execution environment.

12. (original) The method of executing a construct set forth in claim 11 wherein:

the executable code is mobile code; and

the steps of the method are performed in an apparatus to which the mobile code has
been downloaded.

13. (original) A data storage device for use with a computer, the data storage device being
characterized in that:

the data storage device contains code which, when executed by the computer, causes
the computer to perform the method set forth in any one of claims 1, 2, 3, 9, or 11.